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The Dryden X-PRESS

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The SOFIA's starry nights

Becklin brings heady science down to Earth

By Jay Levine
X-Press Editor

People who came out to the City of Palmdale's Thursday Night on the Square event July 28 could have seen the stars as daylight faded, but they didn't have to wait that long to learn about them thanks to a NASA presentation at the AERO Institute.

Eric Becklin, Stratospheric Observatory for Infrared Astronomy chief science advisor, and Stefan Teufel, a SOFIA telescope engineer, brought their out-of-this-world knowledge down to Earth for attendees. Though astronomy is very complex, Becklin and Teufel used common items like a cold water bottle, balloon and spray bottle to illustrate technical concepts.

Becklin explained that the SOFIA aircraft, which carries one of the world's largest infrared telescopes, flies above the water vapor in Earth's atmosphere to capture imagery of heat and radiation from stars, planets and other objects in space. The images are reflected through three mirrors and onto an instrument that is mounted on the telescope and takes measurements.

ED11 0232-34 **NASA Photo by Tom Tschida**

Eric Becklin and a volunteer demonstrate that while heat from faces shows up in the infrared spectrum, cold objects, like a water bottle, appear dark.

As he spoke, he held a balloon to his face while Teufel took a picture with an infrared camera. The balloon appeared invisible because the infrared camera captured the heat from Becklin's face and produced an orange-yellow image.

"It looks like you're burning," a young audience member observed.

Then, to illustrate the effects of moisture, the balloon was sprayed with water. When Teufel took

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Wildfire scanner preparation continues

By Beth Hagenauer
Dryden Public Affairs

A NASA-developed thermal-infrared wildfire scanner is being prepared for potential service during California's fall fire season.

Operating like a digital camera with special filters that detect light energy at visible, infrared and thermal wavelengths, the Autonomous Modular Sensor, or AMS, is mounted in a NASA Beechcraft B200 King Air. The aircraft is based at Dryden.

The device was used to capture images of active hot spots while the aircraft flew over the Eagle fire in San Diego County during a July 22 check flight of the scanner. The fire had broken out the preceding day in rugged terrain on an Indian reservation east of Warner Springs.

ED10 0222-17 **NASA Photo by Lori Losey**

This Dryden-based NASA King Air aircraft, pictured during a mission, will soon be carrying a thermal-infrared wildfire scanner.

From an altitude of 23,000 feet, the AMS took images of the fire in the visible through thermal infrared range. The data were generated autonomously in near-real time on the sensor and downloaded via a

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Bartoli earned first scholarship

By Tess Hoffman
Special to the X-Press

Twenty-seven years ago, the first Apple Macintosh was introduced, space shuttle Discovery made its maiden voyage and Dryden was part of the Ames-Dryden Flight Research Facility. The Ames-Dryden Exchange awarded its very first scholarship that year. The recipient of the Harold J. Walker Memorial Scholarship was Adrian G. Bartoli, son of Dryden research engineer Febo Bartoli.

An August 17, 1984, X-Press article highlighted the then 17-year-old Bartoli's many accomplishments. One of three valedictorians at Quartz Hill High School, Bartoli had participated in the Summer High School Apprentice Research Program at Dryden. His interests included tennis, photography, special effects for film and the role-playing game Dungeons and Dragons. He also enjoyed writing poetry and composing music for the piano.

His first priority, however, was college, and his goal, to become a physician. With the help of the scholarship money, he completed his Bachelor of Science in biochemistry at University of California, Irvine, in 1988, where he also received a master's degree in the same discipline in 1989. He graduated from the UCLA School of Medicine in 1995, finishing his internship at Los Angeles County/USC Medical Center and residency at UCLA Medical Center before moving to San Francisco on a fellowship at the UC-San Francisco Medical Center School of Medicine, specializing in anesthesiology. Ultimately, healing the hurt and finding ways to treat pain became his passion.

NASA Photo

From left at the presentation of the first Exchange scholarship are council representative Al Harris; Bartoli; parents Teruko and Febo Bartoli; Connie Walker, daughter of Harold. J. Walker, and Ames-Dryden deputy site manager Ted Ayers. Above right, Bartoli today in his San Francisco practice.

Submitted Photo

Fast forward to 2011, when Bartoli can be found at the San Francisco Pain Management Center, which he runs with a multi-disciplinary approach. The program offers physical therapy, medical management, targeted injections and minimally invasive surgical techniques. Bartoli also practices Ayurvedic herbal holistic medicine, a system of complementary alternative medicine that is used to enhance, rather than replace, the treatment regimen and the relationship that exists between patient and physician.

His belief in a balance of Eastern/

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Wright wins Dryden Exchange scholarship

Emily G. Wright has been awarded the Dryden Exchange Council's 2011 Thomas W. Finch memorial scholarship. She is the daughter of Code R SAIC employee Larry Wright.

A June graduate of Desert High School with a 4.26 GPA, Wright ranked fifth in her class and was valedictorian. She plans to attend the University of California, Irvine, and major in pharmaceutical sciences.

Wright represented her high school science department at school and county science fairs. She was a group leader for Outdoor Science School, in which fifth graders spend a week in the mountains learning science content standards. She was also chosen by the Antelope Valley Press as a Future Leader.

As an athlete, she participated in track and field, community gymnastics and dance. She was a varsity volleyball manager. Along with sports and academics, Emily played clarinet in the school band and served as band president.

Community service she has performed includes handing out Christmas cards/presents to Antelope Valley Health Care Facility patients, donating blood, working at the Dream Center in Los Angeles doing trash pick-up and food distribution, and participating in multiple Breast Cancer Awareness walks.

Funding for Exchange Council scholarships comes from various council activities, including proceeds from vending machine, Dryden Gift Shop and cafeteria sales. Fundraisers are planned from which all proceeds will go toward future scholarship awards.

ED11 0225-2 NASA Photo by Tom Tschida

Emily Wright, second from left, received her scholarship from Dryden Center Director David McBride, left. Also present were her parents, Larry and Elizabeth Wright, and her sister Kaitlin, third from right.

SAFE aims for awareness

The Safety Action Forum for Employees, or SAFE, recently had a successful coffee chat at Dryden's main campus and at the Dryden Aircraft Operations Facility. About 200 employees stopped by for a free cup of coffee and a donut.

Attendees were given literature on summer hazards such as fireworks and barbeque safety, information about brown recluse and black widow spiders, and additional general-safety information. Safety personnel were also available to answer questions, explain details of the Hazard Resolution Log, and address safety concerns on the spot.

The SAFE group began meeting in March. "Safety Awareness" is the top item on its agenda. Several smaller groups were formed, and the coffee chat was one of the ideas to come out of discussions. The chats are one positive way for the committee to bring safety awareness to the Dryden community, and, hopefully, will be a tool used again.

The committee is always looking for ways to promote and encourage safety, with the ultimate goal of having all employees feel responsible for and empowered by their own safety, the safety of their fellow employees, and the safety of visitors. Everyone is invited to be a part of the committee as it continues to develop and considers other ways of promoting safety and improving accountability, developing procedures, making recommendations, and providing insight to the Executive Safety Committee.

The group meets on alternate Thursdays from 2 to 3 p.m. in the large mezzanine at Dryden and in room 334 at the DAOF. The next meeting is Aug. 11.

ED11 0204-04 NASA Photo by Tom Tschida

ED11 0228-10 NASA Photo by Tony Landis

Summer Sounds

Dryden's final two summer concerts featured a July 11 show by the Edwards Gospel Service Choir, above, with employees Aaron Rumsey (drums) and Al Bowers (guitar), and a July 28 performance by Dryden technical library assistant and singer-songwriter Freddy Lockarno (at left, center) and Jamie Willhite (Code RF, not pictured). The concert series was a fundraiser sponsored by the Employee Exchange Council.

News at NASA

Dawn orbits asteroid Vesta

NASA's Dawn spacecraft, the first ever to orbit an object in the main asteroid belt, is spiraling toward its first of four science orbits. The initial orbit, of the rocky world Vesta, begins Aug. 11 at an altitude of nearly 1,700 miles. It will provide in-depth analysis of the asteroid.

Vesta is the brightest object in the asteroid belt as seen from Earth and is thought to be the source of a large number of meteorites that fall to Earth. The first full-frame image of Vesta, taken July 24 at a distance of 3,200 miles, may be viewed at http://go.nasa.gov/ohdkyh.

After traveling nearly four years and 1.7 billion miles, the spacecraft has been captured by Vesta's gravity, and there currently are 1,800 miles between the asteroid and the spacecraft. The giant asteroid and its new neighbor are approximately 114 million miles from Earth.

Dawn was launched in September 2007. Following a year at Vesta, the spacecraft will depart in July 2012 for Ceres, where it will arrive in 2015. Dawn's mission to Vesta and Ceres is managed by JPL for NASA's Science Mission Directorate. Dawn is a project of the directorate's Discovery Program, managed at NASA's Marshall Space Flight Center in Huntsville, Ala.

Orbital Sciences Corp., Dulles, Va., designed and built the spacecraft. Germany and Italy are international partners. The University of California, Los Angeles, is responsible for overall Dawn mission science. For more information, visit http://www.nasa.gov/dawn.

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another infrared image through the moisture on the balloon, Becklin essentially disappeared.

Using that example, Becklin explained that heat generated by celestial objects, not visible to the naked eye, can be seen in the infrared. Using the wet balloon example, he explained to the audience that the SOFIA takes the telescope above the moisture for a clear view of the universe and beyond.

It might be hard for young children to envision what an eight-foot-wide telescope mirror might look like, so he had audience members hold onto then stretch out a rope in a circle. The kids smiled as they looked around the rope circle and nodded that they understood the size of the SOFIA telescope.

Every Thursday night, the NASA Education Office offers speakers and activities and opens the AERO Institute Exploration Gallery to attendees during the city event. A new International Space Station model debuted in July, and the regular line-up of displays includes a shuttle tire and tile, a shuttle flight simulator, an aircraft cockpit, a SOFIA exhibit, an interactive globe that features information about the Earth, moon and planets, a wind tunnel and more.

Peter Merlin, a NASA historian and Tybrin Corp. employee, has made several presentations at Thursday Night on the Square. In July, his presentations included "Dawn: Exploring New Worlds," an overview of the Dawn robotic spacecraft's exploration mission to the protoplanet Vesta and the dwarf planet Ceres, and "Meteorites: Rocks From Space," an introduction to types and characteristics of meteorites, their origins and significance. Merlin also answered questions at the presentation on "Hometown Heroes – Pete Knight and Joe Walker."

The Thursday events continue through Aug. 18.

Collectors of special postmarks – which are known as "covers" – have about a week to get this special one at the Edwards Air Force Base Post Office. Covers are available for 30 days after their date. Take an envelope to the post office, and bring home a special memento of NASA's iconic program.

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satellite communications system to a Web server at Ames Research Center, Moffett Field, Calif., where the AMS was developed. The U.S. Forest Service then provided the data to the Eagle fire command team.

In partnership with CAL FIRE and the Forest Service during September and October, NASA will conduct wildfire observation missions over California using the sensor if asked.

The AMS has operated aboard several NASA aircraft, most notably on the Ikhana, a NASA Predator B unmanned aircraft system. From 2007 through 2009, the UAS and sensor were flown more than 100 hours to image wildfires from San Diego County as far north as the U.S.-Canadian border.

Aug. 24, 1956 – The High Speed Flight Station receives a Lockheed YF-104A, later designated NASA 818. The airplane is now on permanent display at the National Air & Space Museum.

Aug. 16, 1979 – Shuttle orbiter Enterprise was ferried to Dryden from Marshall Space Flight Center.

Bartoli... from page 2

Western medical treatment has helped many who are grateful that he is not one of "those 'pill mill' doctors." One patient recounts that, "He was the pain management doctor for my mother for her two-and-a-half-week hospital stay before her passing of cancer. I can't say enough about his manner, care, and compassion...all equal to or exceeding his clinical expertise."

Undoubtedly, his parents, now in their eighties and still in the Lancaster home they've lived in for several decades, agree that their only child is truly special.

Shuttle program remembered

Two events are planned to mark the end of the shuttle program.

On Sept. 14, retirees are invited to visit the center from 8 a.m. to 2 p.m. Domingo's in Boron will cater an optional lunch at Dryden at a cost of $12 per person. Please contact Shirley King, shirley.king-1@nasa.gov, 661-276-3418, to RSVP for lunch and base access.

The shuttle program will be celebrated Sept. 15 during the annual Executive Leadership Team barbecue, held at Dryden.

The X-Press is published the first and third Fridays of each month for civil servants, contractors and retirees of the Dryden Flight Research Center.

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